15 April 1964

Ref: 136-056

File
E.K.
Type II Tests

Dear Jack,

In response to Hqs. request 3159, we are forwarding the accompanying material from tests 1210 and 1213. There are four (4) original negatives. For each negative there are two (2) duplicate positives and two (2) 10X positive enlargements.

We do not consider these frames to be indicative of final system capability. They are test results from Type II-C, Serial No. 1, which we acknowledge to be rather seriously drive-limited. Serial No. 2 has incorporated in it an updated drive which demonstrated over 50% higher average resolution during extensive in-house tests.

The complete data format is present on the test 1213 material. This format and its interpretation are described in the accompanying explanation.

The following is a brief resume' of the test conditions and material enclosed.

Test 1210:
Altitude - K12
V/H - .034
Weather - Clear
Test Time - 15 min.

Frame No.	Description
A-81	Highway and pole line, vehicle tracks around poles.
B-126	[redacted]

25X1A

Test 1213:
Altitude - K20
V/H - .034
Weather - Clear
Test Time - 19 min.

Frame No.	Description
A-215	Town of Caliente
A-246	[redacted]

25X1A

[redacted]

25X1A

25X1 [redacted]:rkg
Enc.

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AVAILABLE

Approved For Release 2002/10/16 : CIA-RDP67B00511R000100140003-3

Subject: Interpretation of Data Recorded in Variable Data Block of Type [illegible] Syst[illegible]

The digital data recorded on each frame of the film during photogra[illegible] appears as shown in figure 1. This figure represents a first generation negative. Each word (i.e. frame, longitude, latitude or time) consists of five decimal digits, each coded in four-bit binary code. Each bit in the four tracks (A, B, C or D) consists of either a light-to-dark transition (binary "0") or a dark-to-light transition (binary "1"). The binary equivalents of the decimal integers are shown in figure 2.

The coded decimal digits of each word are arranged in a sequence of multipliers of decreasing significance as shown in figure 1. For frame or time, this sequence of multipliers represents 10^4, 10^3, 10^2, 10^1, and 10^0 frames or seconds, respectively; for longitude and latitude, 10^2, 10^1, and 10^0 degrees and 10^1 and 10^0 minutes of arc.

When a given word is translated from its Gray code, the resultant sequence of decimal integers is in the form of a Gray decimal code. If G_N is an integer in the Gray decimal code and D_N is G_N translated to true decimal notation then the rules for translation from G_N to D_N are as follows:

(1) D_N equals G_N if D_{N-1}, the true decimal translation of the integer of next highest significance, is even or,

(2) D_N equals $9-G_N$ if D_{N-1}, the true decimal translation of the integer of next highest significance, is odd and G_N is not the tens of minutes multiplier in the longitude or latitude words or,

(3) D_N equals $5-G_N$ if D_{N-1}, the true decimal translation of the integer of next highest significance, is odd and G_N is the tens of minutes multiplier in the longitude or latitude words.

Examples of translation of a typical frame or time word and a typical longitude or latitude word are shown in figure 3.

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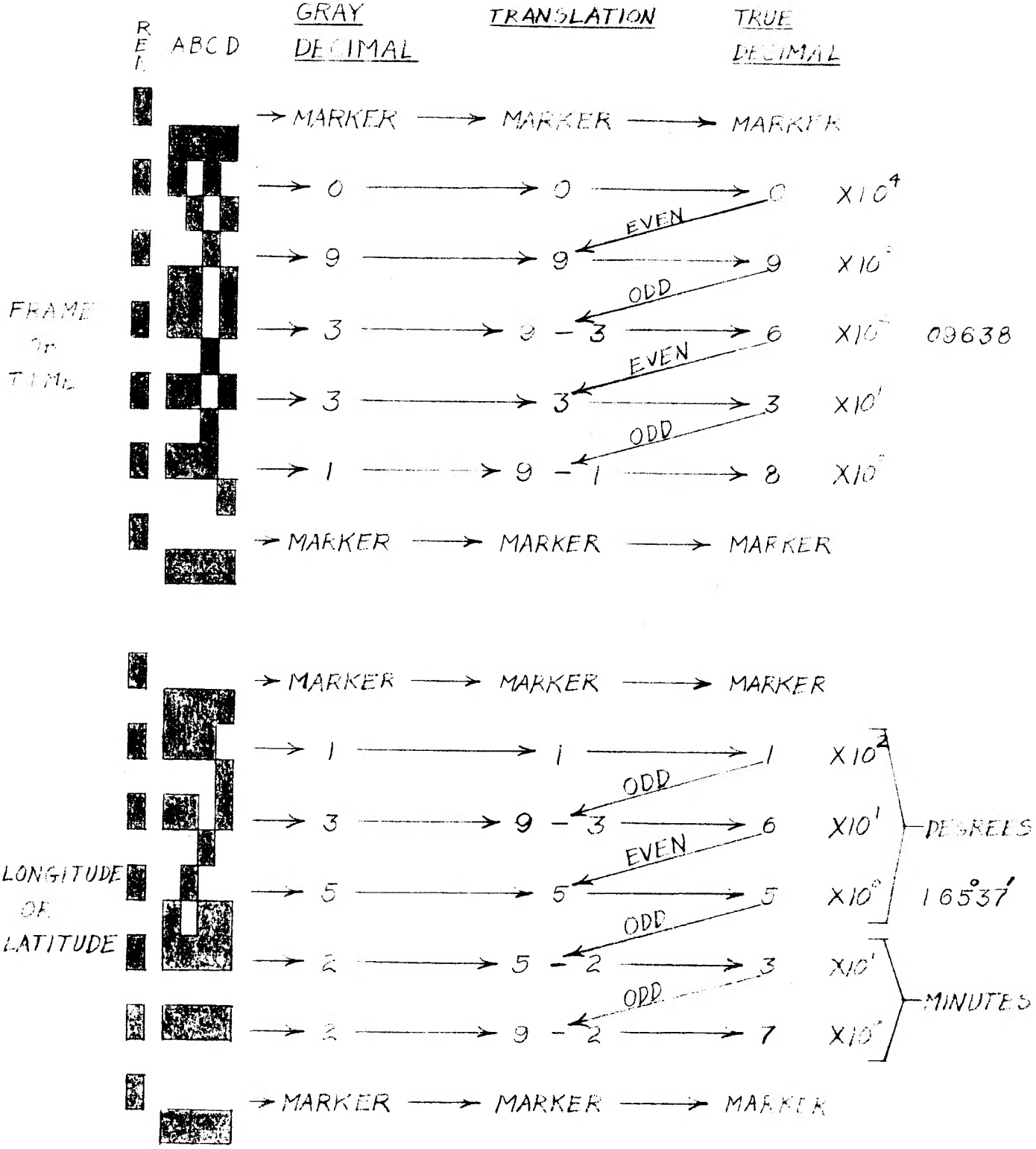
Figure 1 is a sketch of the variable data block area of frame No. 246A, Test 1213. The positions of the inter-word markers, the data words and the tracks are called out. The decoding of the binary data to decimal form is demonstrated in Figure 1. The binary code groups are first translated to Gray decimal digits through the use of the code chart. The Gray decimal digits are translated to true decimal digits via the standard 9's complement reduction method detailed in the accompanying letter (a 5's complement reduction is used to translate the 10's of minutes digit of latitude and longitude due to the base 6 count).

FIGURE 3
EXAMPLES OF DATA TRANSLATION



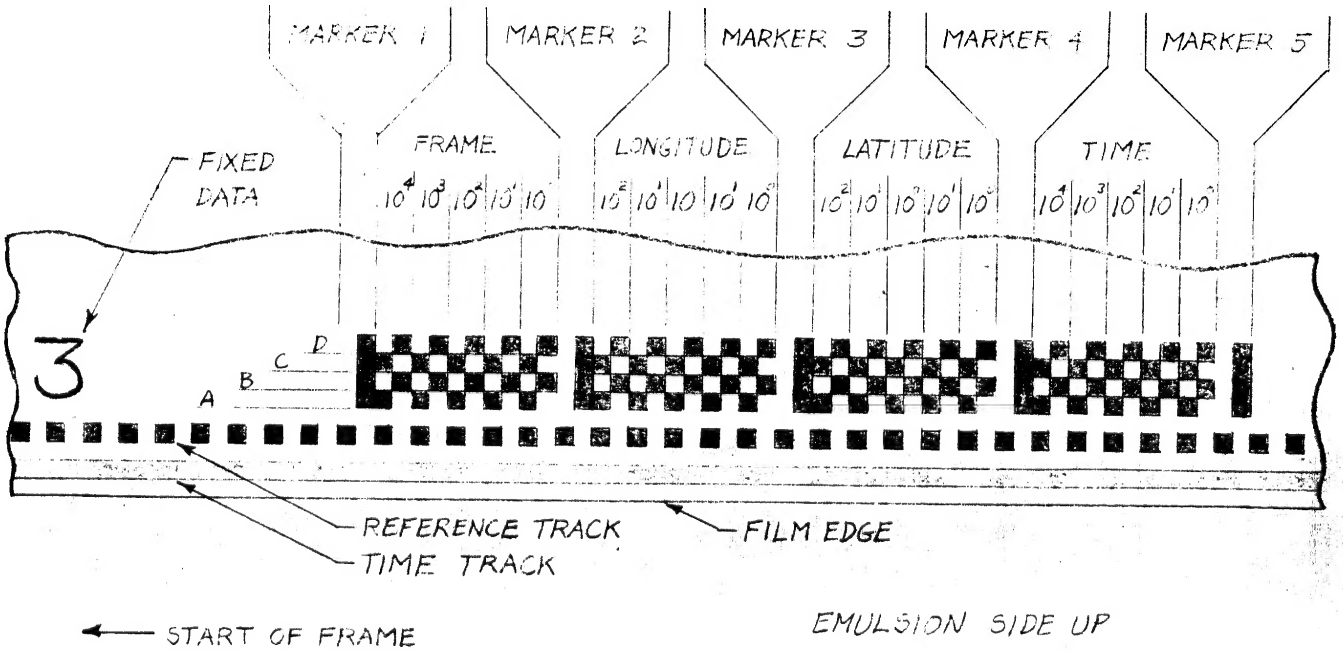
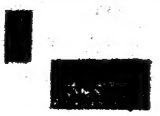


FIGURE 1
VARIABLE DATA BLOCK
(NOT TO SCALE)

GRAY DECIMAL DIGIT	BINARY TRACKS REF TRACK ABCD
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
MARKER	

START OF FRAME

FIGURE 2
DATA SYSTEM'S
BINARY - DECIMAL
EQUIVALENCE

(NOT TO SCALE)

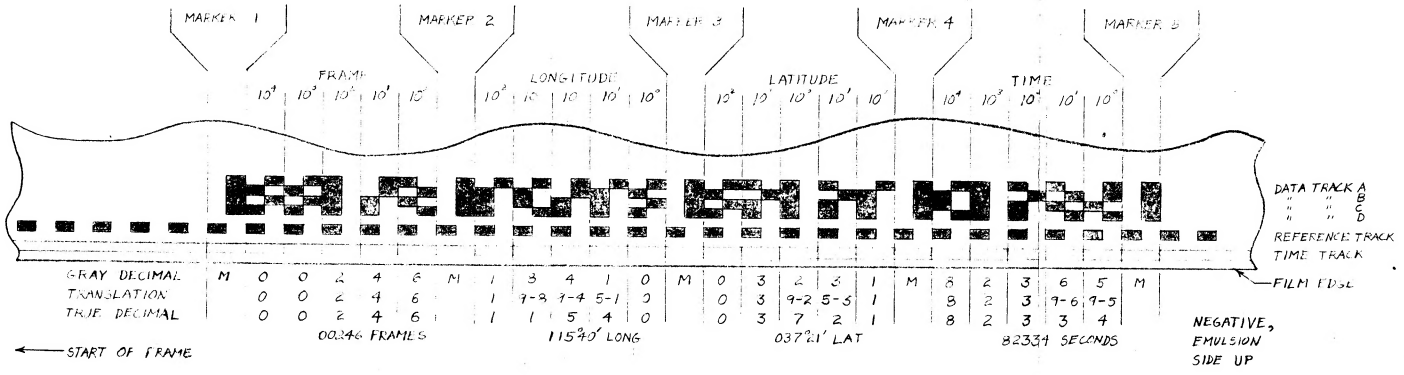
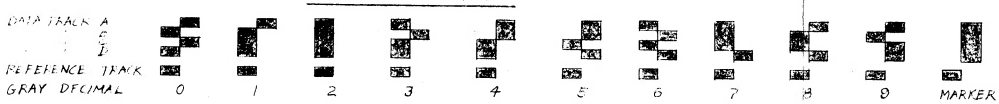


FIGURE 1
FRAME NO. 276, FLIGHT NO. 1213
DATA DECODING

CODE CHART



OSA 5274-63

ILLEGIB

4 October 1963

Dear Jack:

We wouldn't dream of making a fuss about it, but I enclose some comparisons of the recent TPT test with some tests we ran with the Type II A in the I vehicle in June 1962.

These are both third generation dupe negatives and the targets were selected to minimize effects of weather, location with respect to nadir, etc.

To my prejudiced eye, there isn't much difference.

E.L.G.

ELG:atr
Encl.